2. The reciprocating machine of claim 1, wherein the imperfect seal filters the oscillating pressures of the first region to make the third pressure substantially equal to the mean pressure.

3. The reciprocating machine of claim 1, wherein each coupling assembly comprises a piston rod and a coupling mechanism, the piston rod being fixedly attached to the piston and the coupling mechanism located in the second region.

4. The reciprocating machine of claim 1, wherein the airlock pressure regulator comprises a pump and a release valve, the pump connected to a first fluid source.

5. The reciprocating machine of claim 1, wherein the airlock pressure regulator comprises a bidirectional pressure regulator.

6. The reciprocating machine of claim 1, wherein the first region is bounded by at two one cylinders and at least two heater heads.

7. The reciprocating machine of claim 1, wherein the drive is a rocking beam drive comprising:

a rocking beam having a fixed rocker pivot;

a crankshaft; and

a connecting rod coupling the crankshaft to the rocking beam, whereby the oscillatory motion of the rocking beam is converted to rotary motion of the crankshaft.

8. The reciprocating machine of claim 1, wherein the airlock pressure regulator is fluidicly connected to one of the first region and airlock, the airlock pressure regulator comprises:

a pump;

a pressure regulating spool valve; and

a pressure sensor

9. The reciprocating machine of claim 5, wherein the airlock pressure regulator further comprises a controller, the controller in communication with the pressure sensor and the pump, the controller regulating the pump speed based on the signal of the pressure sensor.

10. The reciprocating machine of claim 5, wherein the airlock pressure regulator further comprises a filter, the filter fluidicly connects the pump to the second region.

11. The reciprocating machine of claim 1, wherein the airlock pressure regulator is fluidicly connected to one of the first region and the airlock, the airlock pressure regulator comprises:

a pump;

a pressure regulating spool valve; and

a linear position sensor, wherein the linear position sensor produces a signal indicative of the regulating spool valve position.

12. The reciprocating machine of claim 11, wherein the airlock pressure regulator further comprising a controller, the controller in communication with the pressure sensor and the pump, the controller regulating the pump speed based on the signal of the linear position sensor.

13. The reciprocating machine of claim 11, wherein the airlock pressure regulator further comprises a filter, the filter fluidicly connects the pump to the second region.

14. The reciprocating machine of claim 11, wherein the pressure regulating spool valve is in fluid communication with the at least one of the pump, the airlock and the first region.

15. An reciprocating machine comprising:

a first region comprising a first fluid and two or more reciprocating pistons, the first fluid having a first pressure that oscillates about a mean pressure;

a second region comprising a second fluid and a drive, the second fluid having a second pressure two or more coupling assemblies mechanically connecting the drive to the two or more reciprocating pistons;

an airlock separating the first region from the second region, the airlock containing the first fluid at a third pressure, the airlock being imperfectly sealed from the first region, and the two or more coupling assemblies pass through the airlock;

two or more rolling diaphragm seals sealing the first fluid in the airlock from the second fluid, each rolling diaphragms being connected to one of the two or more coupling assemblies and comprising elastomeric material with fibers dispersed therein; and

an airlock pressure regulator fluidicly connected to the second region, the airlock pressure regulator configured to maintain a predetermined pressure differential between the second pressure and the third pressure.

16. The reciprocating machine of claim 15, wherein the airlock pressure regulator comprises a pump and a release valve, the pump connected to a second fluid source.

17. The reciprocating machine of claim 15, wherein the airlock pressure regulator is fluidicly connected to one of the first region and the airlock, the airlock pressure regulator comprises:

a filter;

a pump;

a pressure regulating spool valve; and

a linear position sensor, wherein the linear position sensor produces a signal indicative of the regulating spool valve position.

18. The reciprocating machine of claim 15, wherein each coupling assembly comprises a piston rod and a coupling mechanism, the piston rod being fixedly attached to the piston and the coupling mechanism located in the second region.

19. The reciprocating machine of claim 15, wherein the airlock pressure regulator is fluidicly connected to one of the first region and the airlock, the airlock pressure regulator comprises:

a filter;

a pump;

a pressure regulating spool valve; and

a linear position sensor, wherein the linear position sensor produces a signal indicative of the regulating spool valve position.

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